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7590 Kevin A. Buford, Esq. Holland & Knight LLP Suite 700 1600 Tysons Blvd. McLean, VA 22102-4867		06/29/2007	EXAMINER STEELMAN, MARY J	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/674,566	Applicant(s) REIMER ET AL.	
	Examiner MARY STEELMAN	Art Unit 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Amendments and Remarks received 04/17/2007. Per Applicant's request, the Specification has been amended. Per Applicant's request, claims 1 and 24 have been amended. Claims 1-29 are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 16-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 16 recites "a program product in a signal bearing medium..." The Specification (page 14, lines 1-14) defines this to include transmission type media such as...wireless communications links using transmission forms such as, for example, radio frequency and light wave transmissions..." Such embodiments are non-statutory. Claim may be amended to recite, "A program product embodied in a recordable medium..."

The Specification has been examined to determine what the Applicant has disclosed, and how the claim language must be interpreted. The Specification recites that a signal bearing medium can be a signal. A general allegation that the claim is a manufacture is not persuasive. A form of energy, i.e., a signal, is not a manufacture as according to the interim guidelines and the MPEP. (Guidelines, p. 56-57)

A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two

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product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101.

Examiner maintains the rejection of claims 16-23.

Specification

4. In view of the amendments to the Specification, the prior objections regarding the trademark JAVA has been withdrawn.

Claim Rejections - 35 USC § 112

5. In view of the amendment to claim 24, the prior second paragraph of 35 U.S.C. 112 rejection is hereby withdrawn.

Response to Arguments

6. Applicant has argued, in substance, the following:

(A) Applicant argues that claim 16 is directed to a statutory category of manufacture and as such it is improper to import limitations from the Specification into the claims.

Examiner's Response: Examiner has looked to the specification (page 14, lines 1-14) for a description of "a signal bearing medium". The definition provided "a transmission type media

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such as...wireless communication links using transmission forms such as, for example, radio frequency and light wave transmission....” Are a non statutory embodiment, under current guidelines. Examiner maintains the rejection of claims 16-23.

(B) Applicant has argued (page 11, bottom half) that Kodosky fails to teach “determining an object containment hierarchy (OCH) or annotating the OCH with a temporal flow hierarchy (TFH).

Examiner’s Response:

As defined in the Specification:

[0004] In general, the current approaches to program analysis roughly fall into two groups: (1) the display of temporal flows of information through the program; and (2) the display of containment information, e.g., **what objects contain or reference other objects**. The most common method to display **temporal flows is the sequential execution of events which occur from some start point to some end point**. This type of explanation typically focuses on the call stack (i.e., which methods call what other methods). Containment information is typically presented in the form of object reference hierarchies (i.e., which objects refer to what other objects). FIGS. 3A and 3B illustrate one such approach via a textual (FIG. 3A) and graphical (FIG. 3B) object containment hierarchy for the illustrated program of FIG. 2.

Kodosky disclosed: [0017]-The configuration diagram may support various types of views...program view. For example, the user can ‘drill down’ in the configuration diagram to

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view a selected portion of the diagram [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), **or combinations thereof (annotating / adding temporal flow information).**

[0107-0108]-interconnected nodes visually indicate (display) the functionality of the program, connected in one or more of a data flow, control flow (temporal flow hierarchy/TCH), and / or execution flow format. [0446]-annotate

Note: Figures 6 (configuration diagram), 7 (configuration diagram), 8 (program icons displayed), 15, 16, 17, 18, 19A, 19B, 19C, 20A (scroll), and 20B.

Examiner believes these references are consistent with the definition of 'object containment hierarchy' and 'temporal flow hierarchy' given in the Specification. Examiner maintains the rejection of claims 1-29.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-29 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication 2003/0037316 A1 to Kodosky et al.

Per claim 1:

A method for providing a hierarchical representation of a program, said method operable at least in part within an information processing system, comprising:

[0014]-The program icons may be displayed with connections to visually indicate their relationship (hierarchical representation of a program)

- a. determining an object containment hierarchy (OCH) for a first portion of the program;
- b. annotating the OCH with a temporal flow hierarchy (TFH) from the program to form an annotated OCH for the program;
- c. presenting a user with at least a portion of the annotated OCH in response to a selection made by the user.

[0017]-The configuration diagram may support various types of views...program view. For example, the user can 'drill down' in the configuration diagram to view a selected portion of the diagram [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may

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comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information). [0107-0108]-interconnected nodes visually indicate (display) the functionality of the program, connected in one or more of a data flow, control flow (temporal flow hierarchy/TCH), and / or execution flow format. [0446]-annotate

Note: Figures 6 (configuration diagram), 7 (configuration diagram), 8 (program icons displayed), 15, 16, 17, 18, 19A, 19B, 19C, 20A (scroll), and 20B.

[0025] The graphical association or deployment performed by the user as described herein is preferably graphically or visually performed and represented in the configuration diagram (presenting a user with at least a portion of the annotated OCH in response to a selection made by the user). Thus the configuration diagram may be visually updated to reflect the actions performed by the user. Stated another way, the configuration diagram may be updated in real time as the user performs iconic operations as described herein, such as the deployment operations discussed above. Thus the configuration diagram may display an updated iconic relationship view of the devices and distributed programs as the user associates (e.g., drags and drops) the program icons on the device icons, the program icons on other program icons, the device icons on other device icons, etc. For example, as the user drags and drops program icons (e.g., from the configuration diagram) on to various device icons on the configuration diagram, the system may operate to update the displayed relationship (e.g., hierarchy) of programs

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proximate to, e.g., underneath, the respective device icon to where they have been deployed, modify the appearances of icons, etc.

Per claim 2:

-wherein steps a and b are performed by a program analysis tool based on structural and functional data of the program.

[0009]-debugging and performance analysis (program analysis tool) [0009]-structural data of the program [0013]-functional data of the program

Per claim 3:

-prior to step c, displaying a portion of the OCH in response to a selection of a coding pattern, wherein said tool is a debugger and said user selection is a selection of an object in said first portion of the program related to said OCH.

[0026], [0041], [0286], [0446] debugger tool, user input selects device icon and / or select a respective program icon associated with the device and view the block diagram of the graphical program [0014]-object-oriented view

Per claim 4:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy,

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[0014]-The iconic relationship view may comprise an object oriented view, a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view, or combinations thereof.

-and step b comprises adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

[0014]-visually indicate their relationship, such as their invocation (e.g. caller/callee) relationship (temporal flow information / invocation hierarchy) [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view, a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view, or combinations thereof (adding temporal flow information).

Per claim 5:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

[0281]-configuration diagram displayed with an iconic relationship view [0286]-text representation

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Per claim 6:

-wherein step c comprises opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

As an example, see FIG 20A. [0284-0286]-source code of the program to be displayed

Per claim 7:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and step a further comprises determining the TFH for the first portion of the program.

[0446-0448]-debugging, [0456]-analyzer, [0475]-quality of measurement information

Per claim 8:

An information handling system comprising a processor and a program analysis tool, the program analysis tool comprising plural instructions and said processor being operably configured to execute said plural instructions, wherein said plural instructions comprise:

-first instructions for determining a program hierarchy for a program based on an output of said tool, wherein the program hierarchy comprises a combination of an object containment hierarchy (OCH) and a temporal flow hierarchy (TFH) of the program;

[0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference

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hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information).

-and presentation instructions for presenting at least a portion of the program hierarchy in response to a user input.

[0014]-The program icons may be displayed with connections to visually indicate their relationship (hierarchical representation of a program)

Per claim 9:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and further instructions for annotating the OCH with information from the TFH to form an annotated OCH for presenting as said portion of the program hierarchy.

[0017]-The configuration diagram may support various types of views...program view. For example, the user can 'drill down' in the configuration diagram to view a selected portion of the diagram[0107-0108]-interconnected nodes visually indicate (display) the functionality of the program, connected in one or more of a data flow, control flow (temporal flow hierarchy/TCH), and / or execution flow format. [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an

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execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information). [0446]-annotate

Per claim 10:

-wherein said tool is a program understanding tool operable for performing the first instructions based on operational data of the program.

[0159]-configuration diagram may be automatically or programmatically created by the computer system, based on an automatic detection (program understanding tool) of devices...

[0161]-the connection that is displayed or created on the display may have a context or appearance that is associated with the data type of the data, or type of material, being transmitted between the devices.

Per claim 11:

-wherein said program understanding tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

[0446-0448], [0456], [0475] – debugger/ analyzer [0018]-detect the relationship among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow

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information).

Per claim 12:

-wherein said program understanding tool is a debugger, the system further comprising instructions for displaying a portion of the OCH in response to a selection of a bug, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH.

[0446-0448]-user selects (user input) device icon and / or program icon and views the block diagram of the graphical program, using various debugging tools such as break points (selection of an object), single stepping and execution highlighting.

Per claim 13:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the second instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 4 above.

Per claim 14:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

See rejection of claim limitations as addressed in claim 5 above.

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Per claim 15:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 6 above.

Per claim 16:

A program product in a signal bearing medium executable by a device for presenting a hierarchical representation of a target program, the product comprising: first instructions for determining a program hierarchy for the target program based on an output of said product, wherein the program hierarchy comprises a combination of an object containment hierarchy and a temporal flow hierarchy of the target program; and presentation instructions for operably presenting at least a portion of the program hierarchy in response to a user input.

See rejection of claim limitations as addressed in claim 1 above.

Per claim 17:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and further instructions for annotating the OCH with information from the TFH to form an annotated OCH for said presentation instructions to operably present.

See rejection of claim limitations as addressed in claim 1 above.

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Per claim 18:

-further comprising a program understanding tool operable for performing the first instructions based on operational data of the program.

See rejection of claim limitations as addressed in claim 10 above.

Per claim 19:

-wherein said tool is a static analysis tool, the program product further comprising instructions for displaying a portion of the OCH in response to a selection of a program structure, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH.

See rejection of claim limitations as addressed in claims 11 & 12 above.

Per claim 20:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the second instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 13 above.

Per claim 21:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first

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group.

See rejection of claim limitations as addressed in claim 14 above.

Per claim 22:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 15 above.

Per claim 23:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

See rejection of claim limitations as addressed in claim 11 above.

Per claim 24:

A program analysis apparatus, operable for determining and presenting a hierarchical representation of a target program, the apparatus comprising program analysis instructions and a processor and memory operably configured to run said instructions, said instructions comprising:
-first instructions for determining a program hierarchy for the target program based on an output of said apparatus, wherein the program hierarchy comprises a combination of an object containment hierarchy and a temporal flow hierarchy of the target program;

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-and further instructions for presenting at least a portion of the program hierarchy in response to a user input.

See rejection of claim limitations as addressed in claim 1 above.

Per claim 25:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and third instructions for annotating the OCH with information from the TFH to form an annotated OCH for presenting as said portion of the program hierarchy, the first instructions being further part of a program analysis software tool operable for performing the first instructions based on operational data of the program.

See rejection of claim limitations as addressed in claims 1 & 2 above.

Per claim 26:

-wherein said tool is a profiler, the apparatus further comprising instructions for displaying a portion of the OCH in response to a selection of a program structure, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH;

-and wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the further instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 3 above.

Per claim 27:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

See rejection of claim limitations as addressed in claim 5 above.

Per claim 28:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 6 above.

Per claim 29:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

See rejection of claim limitations as addressed in claim 3 above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached at (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

06/21/2007



MARY STEELMAN
PRIMARY EXAMINER